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Report to the Chairman, Legislation and
National Security Subcommittee,
Committee on Government Operations,
House of Representatives

July 1, 94

ENVIRONMENTAL CLEANUP

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Inconsistent Sharing Arrangements May Increase Defense Costs



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United States
General Accounting Office
Washington, D.C. 20548

National Security and
International Affairs Division

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The Honorable John Conyers, Jr.
Chairman, Legislation and National Security Subcommittee
Committee on Government Operations
House of Representatives

Dear Mr. Chairman:

As requested, we are reviewing Department of Defense's (DOD) efforts to clean up environmental damage on DOD-owned property. We are focusing on the damage caused or partially caused by other parties at government-owned, contractor-operated (GOCO) plants and the Rocky Mountain Arsenal (where a private lessee contributed to the cleanup of contamination). As your office requested, we are providing an interim report on DOD's (1) cleanup costs at contaminated facilities and (2) approach for sharing cleanup costs between the government and other parties.

Background

A significant part of environmental contamination on DOD property has involved defense contractors and other private parties. Some of these private parties performed no services for DOD but leased property from it.

The principal laws governing hazardous waste cleanup at federal facilities are the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, 42 U.S.C. 9601 et seq. and the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, 42 U.S.C. 6901 et seq. CERCLA holds owners, operators, and other responsible parties liable for remediating past contamination. RCRA regulates the day-to-day management of hazardous wastes and is typically used to address contamination at active facilities.

Results in Brief

Environmental cleanup at DOD GOCO plants and the Rocky Mountain Arsenal will generally take longer and cost far more than indicated by DOD. According to DOD's fiscal year 1993 environmental cleanup report to the Congress, DOD will have spent about \$2.7 billion by 2020 to clean up 78 GOCO plants and the Rocky Mountain Arsenal. The report states that DOD has already paid about \$1 billion of this. However, military service and Defense Logistics Agency (DLA) data indicate that these figures are understated. According to these data, projected costs (those that DOD has

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not already paid) will be \$3 billion, about 70 percent more than reported by DOD. Our work at selected sites indicates that eventual actual costs will be even higher than indicated by DOD or the services.

CERCLA imposes liability for cleanup on a variety of potentially responsible parties including facility operators and generators of hazardous substances. Lacking clear guidance from the Office of Secretary of Defense level, the services have developed policies that interpret their authority to seek cost sharing from other parties differently. Consequently, the services have not consistently requested that GOCO operators share in the cost of cleaning up past contamination. Notable exceptions are formerly used defense sites such as former GOCO facilities sold to the private sector, where cleanup is managed by the Army Corps of Engineers. Also, a contribution of about \$250 million has been obtained thus far from the lessee at the Rocky Mountain Arsenal.

Environmental Cleanup Costs Will Likely Be Greater Than Reported

The DOD report for fiscal year 1993 was a first effort to provide detailed cost estimates.¹ We found that, taken together, these estimates were understated, compared with service- and DLA-provided cost data for the 78 GOCO plants and the Arsenal. Further, our analysis of source data from selected GOCO facilities and the Arsenal indicated that the costs were likely to be even higher than the service estimates.

Service and DLA Projections Exceed DOD's Cost Estimates

About \$1.76 billion of DOD's about \$2.7 billion total cleanup cost estimate was for projected future costs at GOCO plants and the Arsenal. Army, Air Force, Navy, and DLA estimates for these locations exceeded DOD's projections by about \$1.24 billion (by 70 percent). Table 1 compares DOD's projections with those provided by the services and DLA.

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¹Defense Environmental Cleanup Program, Annual Report to Congress for Fiscal Year 1993, March 31, 1994.

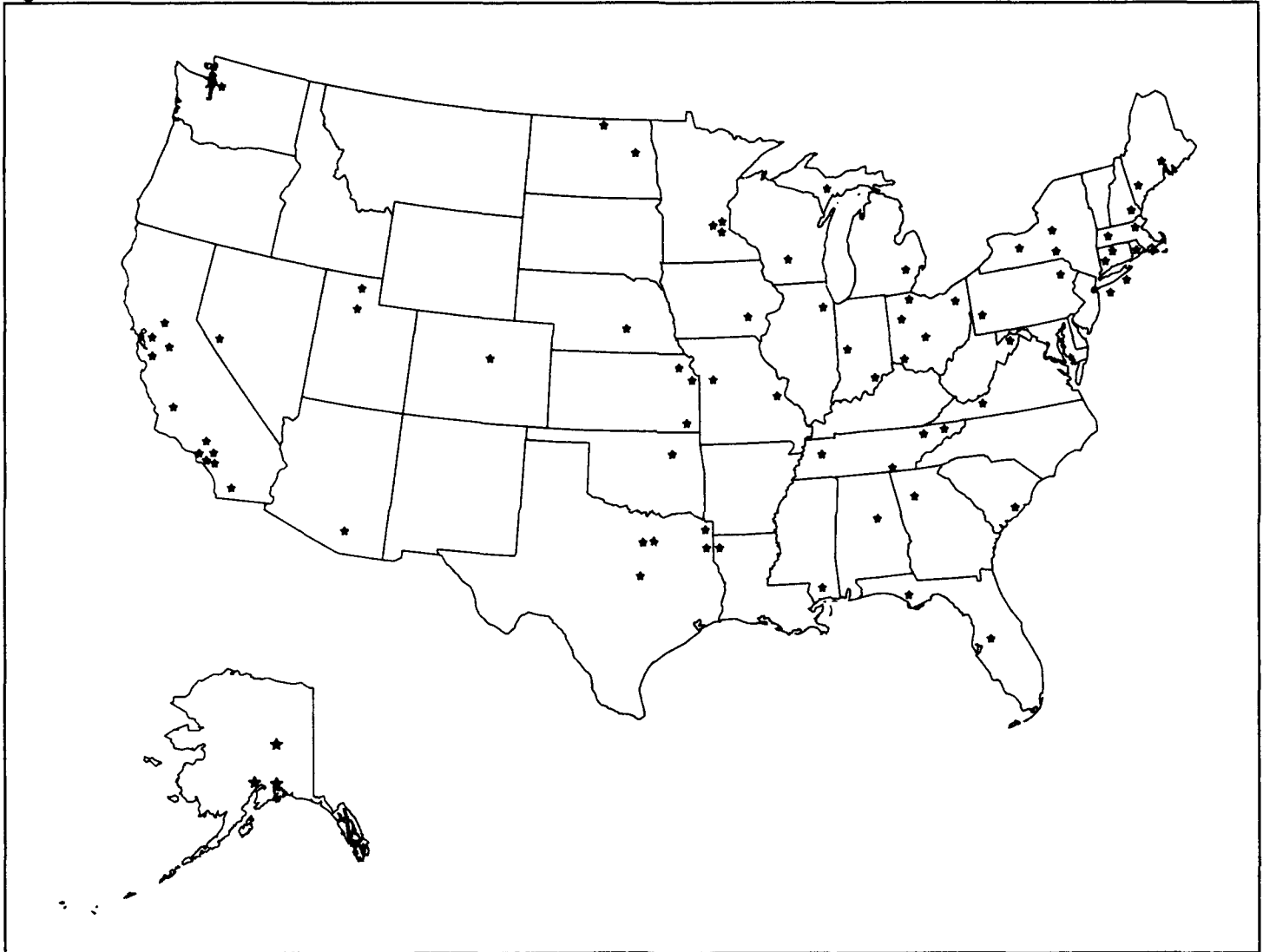
Table 1: Comparison of Projected Cleanup Costs for DOD GOCO Plants and the Rocky Mountain Arsenal

Dollars in millions				
DOD GOCO plants and Arsenal	Cleanup estimates		Differences	
	Services and DLA	DOD	Cost	Percentage
Army (27)	\$789	\$535	\$254	47
Air Force (11)	204	231	(27)	(12)
Navy (19)	76	75	1	1
DLA (21)	150	73	77	106
Rocky Mountain	1,783	847	935	110
Total	\$3,001	\$1,761	\$1,240	70

Note: The number of GOCO plants reported by each service and DLA is in parentheses in the left-hand column. DLA cost data were reported by DLA's major subordinate organizations. Totals and differences may not compute due to rounding.

DOD, service, and DLA officials stated that possible reasons for the disparities between DOD and service and DLA estimates included missing data, differing completion dates, submission of budget estimates for limited periods, or not considering contributions from other parties. For the Rocky Mountain Arsenal, an Arsenal official stated that its \$2.3 billion estimate included only government costs, and the \$250 million contribution by the Shell Chemical Company was an additional amount. However, we have not yet determined why DOD did not resolve these large differences when it updated its fiscal year 1993 annual report data in 1994. We will address this issue in our ongoing work.

Figure 1 shows the approximate locations of the 78 GOCOS discussed in this report.

Figure 1: Locations of 78 DOD GOCOs

Source: Army, Navy, Air Force, and DLA.

Note: There is one GOCO in Puerto Rico. All locations are approximate.

Data at Selected DOD Facilities and the Arsenal Indicate Even Higher Costs

Data at selected GOCO facilities and the Arsenal showed that future estimates are likely to be greater than indicated by either the DOD annual report or service data. The data indicated that cleanup time frames are

likely to be longer, site investigations are expected to identify more work to be done, and tightened standards may further increase costs.

Twin Cities Army Ammunition Plant

The Twin Cities Army Ammunition Plant is a GOCO facility located in New Brighton, Minnesota, that has been in operation since the 1940s. Now, however, it is mainly involved with cleanup activity. The Federal Cartridge Company holds the operating contract, and lessees on the property include Alliant Techsystems and the 3M Corporation. The site has been on the National Priorities List since 1983, with contamination including trichloroethylene, cyanides, metals, and volatile organic compounds, which are found in both soil and groundwater.

DOD reported total cleanup costs of \$154 million, but our analysis of available data indicated total costs of \$600 million excluding inflation. Our discussions with Army officials indicated that cleanup actions would continue through the year 2052, as compared with DOD data showing completion in 2000 and Army budget estimates projecting costs only to the year 2000. According to facility records, treatment of groundwater contamination will be a long-term activity. The facility's project management staff agreed that facility cost factors (excluding inflation) for 1994 through 2052 indicated a future cost of about \$540 million. Costs already paid varied among the sources, ranging from about \$59 million to \$68 million.

Air Force Plant No. 44

Air Force Plant No. 44 is an active GOCO facility that has been operative since 1951, and is located in Tucson, Arizona. Hughes Missile Systems Company holds the operating contract. The site has been on the National Priorities List since 1985, with contaminants including trichloroethylene, chromium, and other metals, which are found in soil and groundwater.

DOD reported a total cleanup cost of \$63.9 million, while Command records indicated that the cost would be \$88 million. These estimates do not appear consistent with data about the cleanup at the site. For example, DOD's report shows completion in 2003, and command data projected cost to 2006.

An Air Force command-level official agreed but told us that they did not plan for cleanup costs beyond the year 2000 because the Air Force will no longer own the plant by then. According to Air Force officials, the Air Force plans to divest all GOCO facilities by 2000. Nevertheless, under

CERCLA, federal agencies remain financially responsible for the environmental cleanup of divested facilities. For example, the Air Force is still paying for environmental cleanup at a former GOCO plant (Air Force Plant No. 36, near Cincinnati, Ohio), which it sold to General Electric in 1989.

**Naval Industrial Reserve
Ordnance Plant, Fridley**

The Naval Industrial Reserve Ordnance Plant in Fridley is a GOCO facility located near Minneapolis, Minnesota, and has been in operation since 1941. The United Defense Limited Partnership holds the operating contract. The site has been on the National Priorities List since 1987, with contamination including volatile organic chemicals, polychlorinated biphenyls, and oil, which are found in soil and in groundwater.

DOD reported total cleanup cost of \$13.1 million, of which \$4.6 million was the projected future cost from fiscal year 1994 to completion in 1999. However, data provided by service and facility officials indicated that \$8.5 million would be needed for cleanup for fiscal years 1994 through 1997. In addition, program managers stated that the reported completion date may be unrealistic because the site is using a pump and treat remedy for groundwater contamination that could take as much as 25 years.

Rocky Mountain Arsenal

The Rocky Mountain Arsenal is a government-owned and operated facility located northeast of Denver. Established in 1942, a portion of it was leased to the Shell Chemical Company for more than 30 years from 1952 to 1987 to produce pesticides. Army production at the Arsenal ceased in the late 1960s. The Arsenal is contaminated with pesticides, gas and nerve agents, metals, and incendiaries. Contaminants appear in soil and groundwater, and the facility was listed on the National Priorities List in July 1987.

The DOD annual report showed \$1.36 billion for the total cleanup cost for the Rocky Mountain Arsenal. However, representatives of the Army, the Environmental Protection Agency (EPA), and the State of Colorado agree that the cleanup cost will be at least \$2.3 billion. The difference appears largely due to lower projected costs in the DOD report. The Arsenal's data indicated future costs of about \$1.78 billion as compared with \$0.85 billion in the DOD report. We have not yet determined the reason that the higher estimate was not incorporated in DOD's annual report.

Court Decision Is Expected to Increase Cost Estimates

A recent court action supported state authority over the Rocky Mountain Arsenal cleanup. This is expected to further increase remediation costs.² The United States had brought an action to prevent the State of Colorado and the Colorado Department of Health from asserting state administrative authority to regulate hazardous waste management activities at the Arsenal.

Army officials expect Colorado's requirements will add at least another \$1 billion to the cleanup cost at the Arsenal and could range from \$10 billion to \$20 billion in a worst-case cleanup. Also, Air Force officials at Plant PJKS in Colorado increased their estimate of cleanup costs from about \$2.8 million to the about \$50 million they reported to DOD, due primarily to their belief that the state's requirements will drive up costs.

Policies and Practices Regarding Cost Sharing Are Inconsistent Among and Within Services and DLA

CERCLA imposes liability for cleanup on a variety of potentially responsible parties, including facility operators and generators of hazardous substances.

Each of the services and DLA described a different policy for cost sharing, and the policy of a service sometimes differed from the headquarters to the command level. An Army headquarters procurement policy official stated that decisions on cost sharing at Army GOCO ammunition plants are made on a case-by-case basis. Data from the Army command and facilities indicated that their GOCO ammunition plants were indemnified through indemnification clauses inserted under Public Law 85-804, and did not mention case-by-case decisions.³ Air Force headquarters officials stated that the Air Force does not have a specific policy but that its approach is guided by the Air Force's Installation Restoration Program. Navy headquarters policy states that, unless a contract stated otherwise, GOCO plant operators must share costs.

EPA policy states that status as a GOCO plant operator does not shield an operator from EPA's enforcement actions. January 1994 EPA guidance to its divisions and regions states that EPA will pursue an operator for noncompliance with environmental laws.

²United States v. State of Colorado, 990 F.2d 1565 (10th Cir. 1993), cert. den. 114 S. Ct. 922 (Jan. 24, 1994).

³In general, Public Law 85-804, 50 U.S.C. 1431 et seq., allows agencies to enter into, amend, and modify contracts to facilitate the national defense without regard to other legal provisions relating to such acts.

Army Policy and Practice

We obtained conflicting information at the Army command and headquarters levels regarding the policy and legal basis for their cost sharing practice. At the command level, officials stated that most of the Army's GOCO ammunition plant operators were indemnified against environmental liability. As support, they provided memorandums, which cited Public Law 85-804, from the Secretary of the Army authorizing the major command to insert indemnification provisions into contracts with 19 Army ammunition GOCO plant operators. An additional ammunition plant that was not mentioned in the Secretary's memorandums was also contractually indemnified. DOD estimates that the total cleanup for the 20 GOCO plants will be about \$800 million.

At Army headquarters, a procurement policy official stated that Public Law 85-804 was not the basis for paying environmental cleanup costs for GOCO plant operators. He said the Army does not indemnify contractors against environmental expenses. As support, he provided a memorandum stating that, rather than one overall policy regarding payment for cleanup at its GOCO plants, the Army makes such determinations on a case-by-case basis. However, a headquarters legal official agreed with the command's view that Public Law 85-804 was being used to indemnify ammunition plant operators for environmental cleanup.

Army Corps of Engineers

The Army is funding all cleanups at its GOCO ammunition plants, but the Army Corps of Engineers is asking other former GOCO plant operators to share in the cost of cleanup. According to a Corps official, the Corps is negotiating cost sharing agreements with former GOCO operators and other parties at formerly used defense sites. DOD has delegated management of cleanup of such sites to the Corps. The objective is to get early agreement among parties on cost allocation, rather than through litigation and cost recovery actions.

The official believes these are the strongest efforts in DOD to recognize and pursue CERCLA liability issues. Our initial review at one district office indicates that the Corps has 22 cases that involve GOCO contractors. While they are at various stages of review, at least 9 of the 22 cases have the contractor involved in negotiating, settling for cost sharing, or performing the cleanup.

As discussed in the Air Force section, the Corps is also assisting the Air Force in a search for potentially responsible parties at a current GOCO site.

The Air Force wants to sell the facility to the contractor for a price that also considers the contractor's contribution to the environmental damage.

**Rocky Mountain Arsenal
Policy and Practice**

The Shell Chemical Company leased facilities at the Army's Rocky Mountain Arsenal to make pesticides from 1952 to 1987. Because its operations contributed to the Arsenal's contamination, Shell agreed to pay

- 50 percent of the first \$500 million of cleanup costs,
- 35 percent of the next \$200 million, and
- 20 percent of anything over \$700 million.

The agreement states that neither Shell nor the Army can charge program management costs to the allocable total. Shell has contributed about \$250 million toward the cleanup so far.

**Air Force Policy and
Practice**

In response to our inquiry regarding the policy or legal basis for paying GOCO plant cleanup costs, a headquarters acquisition policy official stated that the Air Force does not have a cost sharing policy as such, but rather an approach guided by the Installation Restoration Program. Air Force Materiel Command officials told us that the command's understanding of Air Force policy is that the Air Force pays for the cleanup, and later pursues other responsible parties, including GOCOs, to recover the cleanup costs.

Air Force command-level officials stated that the Air Force is currently funding all cleanup at its 11 GOCOs. Regarding the facility we visited (Air Force Plant No. 44), a 1987 memorandum from the former Air Force Systems Command expressed the opinion that Plant No. 44's operator, Hughes Missile Systems Company, was indemnified from responsibility for past groundwater contamination and could be paid for environmental cleanup, including an allowance for profit. The company is involved in some cleanup projects, but company officials say they receive no profit for that work.

The Air Force is attempting to pursue responsible parties at GOCO plants. The Air Force requested funding in fiscal year 1994 for their first search for potentially responsible parties. An Air Force official stated that the search will be performed at plant PJKS and patterned after that used by the Army Corps of Engineers.

A recent study commissioned by the Air Force is attempting to address cost recovery issues. The study authors concluded that (1) DOD has a legal basis for recovering costs from other potentially responsible parties and (2) a cost recovery program would be economically feasible.

Policy and Practice

Policy guidance we obtained from Navy headquarters states that operators are potentially liable for environmental damage. According to October 1990 guidance from the Chief of Naval Operations, past and present contractors share liability for environmental damage since they are operators and generators at federal facilities. The guidance also states that, absent special contractual provisions to the contrary, Navy policy is to require current GOCO contractors to pay for any and all cleanup costs associated with their operation of Navy facilities.

None of the three commands responsible for the 19 GOCO plants had a written policy on cost sharing. Officials of the Naval Air Systems Command (NAVAIR) and Naval Sea Systems Command (NAVSEA), which together are responsible for 17 of the GOCO plants, stated that their policy is to request contractors to share in remediation costs. They showed us sample letters requesting contractor participation but expressed concern that the operators may later obtain government reimbursement. None of the contractors initially agreed to share costs, although NAVAIR and NAVSEA officials said some later have agreed to do some cleanup work. NAVSEA officials told us they had not sent such a letter to the contractor for the Navy GOCO plant we visited.

Officials of the Navy's Strategic Systems Programs office stated that their two GOCO plant contracts had no clauses relating to environmental cleanup costs. They stated that the command policy is consistent with Navy-wide policy, and that GOCO plant operators have agreed to share in cleanup costs.

Policy and Practice

In current operations, DLA's Defense Fuel Supply Center officials stated that it is their policy to require contractors to act quickly, if they detect leaks, to contain and clean up any spill. A contractor failing to do so could be held liable for remediation costs. According to a DLA legal official, the contractor operating the Charleston facility paid \$550,000, or more than half of the settlement for alleged damage. The Center includes numerous provisions in its contracts relative to liability for the facilities. A common provision is "The Contractor shall be liable for . . . damage to, the facilities

... that results from willful misconduct or lack of good faith on the part of the Contractor's managerial personnel."

For historical damages, DLA's Defense Fuel Supply Center generally charges its customers for remediation costs through the assessment of a surcharge on its petroleum products. In some cases, the Center has obtained agreement by operating contractors or other responsible parties to share in cleanup costs.

Recommendations

It is important that potentially responsible parties share in the cost of cleanup. We believe the high cleanup costs, coupled with inconsistent policies and practices for recovering costs from other parties can lead to serious budget consequences. Therefore, we recommend that the Secretary of Defense (1) place immediate priority on ensuring that the best available cleanup cost information is used for its planning and budgeting system and for its reports to the Congress and (2) provide guidance to resolve the disparities among procedures and policies on environmental cleanup responsibility and costs. In resolving these disparities, the Secretary should consider the following issues:

- What incentives are needed to minimize environmental contamination and to ensure fair allocation of costs among DOD and private parties?
- How can DOD policies and practices better hold contractors and other private parties liable for their role in the contamination of DOD property?
- Do DOD information systems provide the data, including the data on costs and potentially responsible parties, needed for DOD recovery of cleanup costs from other parties?
- Should contractors subsequently be permitted to recover from DOD part or all of the contributions they have made toward cleanup?

People and Methodology

Our work was conducted at the Washington, D.C., area headquarters offices of DOD, DLA, and the military services and at selected commands and field installations. The Washington, D.C., area commands included NAVAIR, NAVSEA, the Defense National Stockpile Center, and the Defense Fuel Supply Center. We also visited the Army Environmental Center in Aberdeen, Maryland; the Air Force Acquisition Environmental Management Directorate in Dayton, Ohio; and the Naval Facilities Engineering Command Southern Division in Charleston, South Carolina. Field installations visited were Air Force plants No. 44 in Tucson, Arizona, and PJKS in Waterton, Colorado; the Twin Cities Army Ammunition Plant

in New Brighton, Minnesota; the Naval Industrial Reserve Ordnance Plant in Fridley, Minnesota; and the Rocky Mountain Arsenal in Denver, Colorado.

At these commands and field installations, we interviewed defense officials as well as contractor, state agency, and EPA officials. We reviewed historical and projected environmental cleanup cost data and related contractual provisions. In addition, we collected information about DOD's environmental restoration program, the status of cleanup at DOD GOCOs and the Rocky Mountain Arsenal, and the legal bases for DOD's payment of environmental cleanup at GOCO facilities and related costs.

As requested, we did not obtain written agency comments on a draft of this report. However, we discussed our findings and recommendations with agency officials and included their comments where appropriate. We performed our work from August 1993 to June 1994 in accordance with generally accepted government auditing standards.

Unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days after its issue date. At that time, we will send copies to appropriate congressional committees; the Secretaries of Defense, the Army, the Navy, and the Air Force; and the Directors of DLA and the Office of Management and Budget. We will also make copies available to others upon request.

Please contact me on (202) 512-8412 if you or your staff have any questions concerning this report. Major contributors to this report are listed in appendix I.

Sincerely yours,



Donna M. Heivilin
Director, Defense Management
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